

FIG. 1

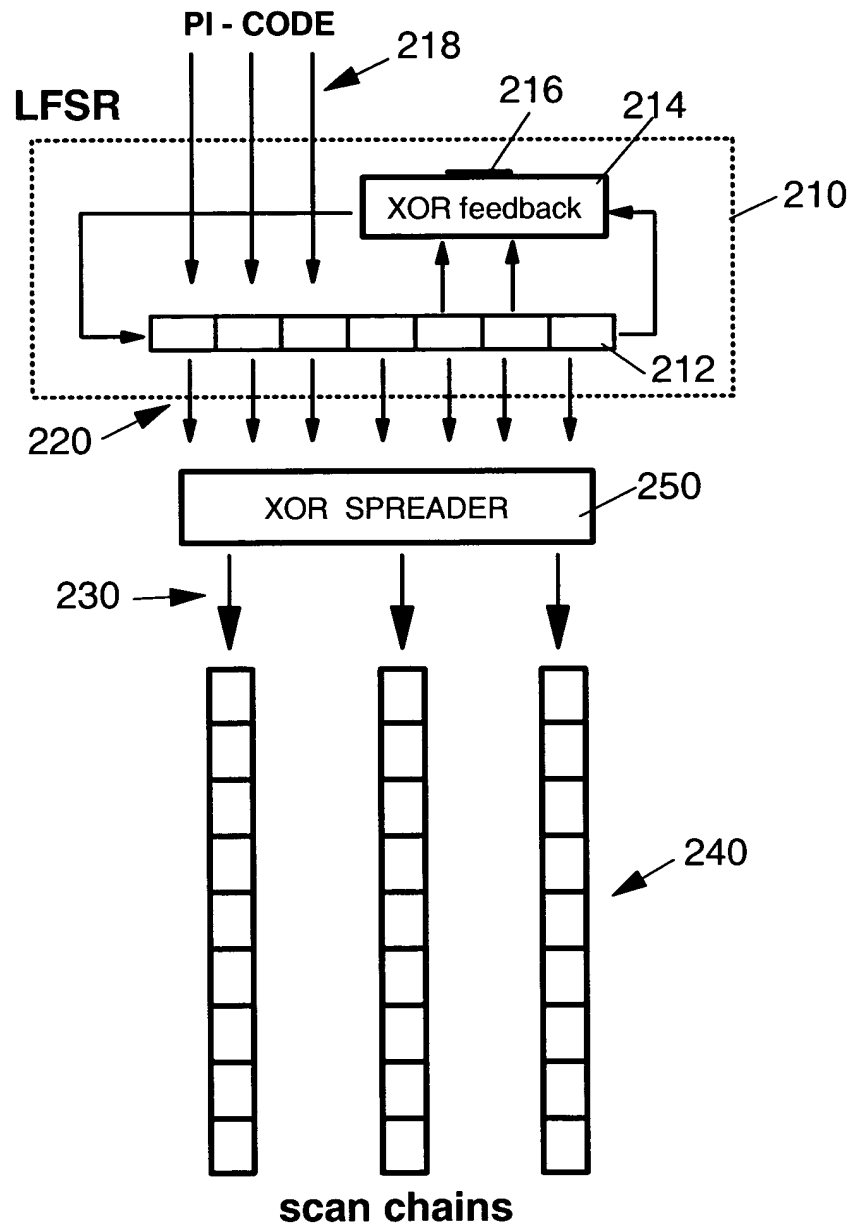
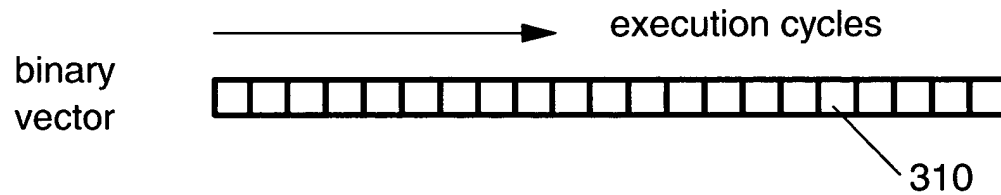


FIG. 2

LFSR Generator Code

representation of LFSR over a certain number of cycles

**Chain Access Operator** (optional)

representation of XOR-SPREADER

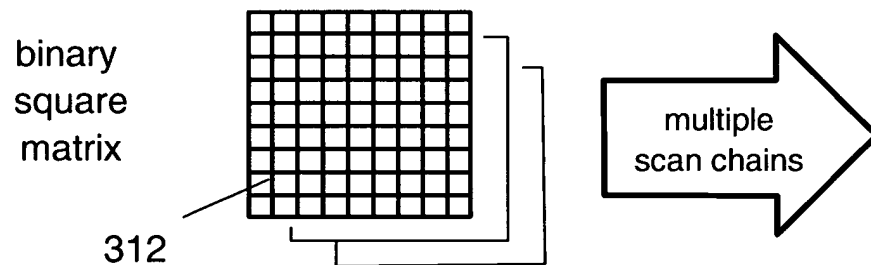


FIG. 3

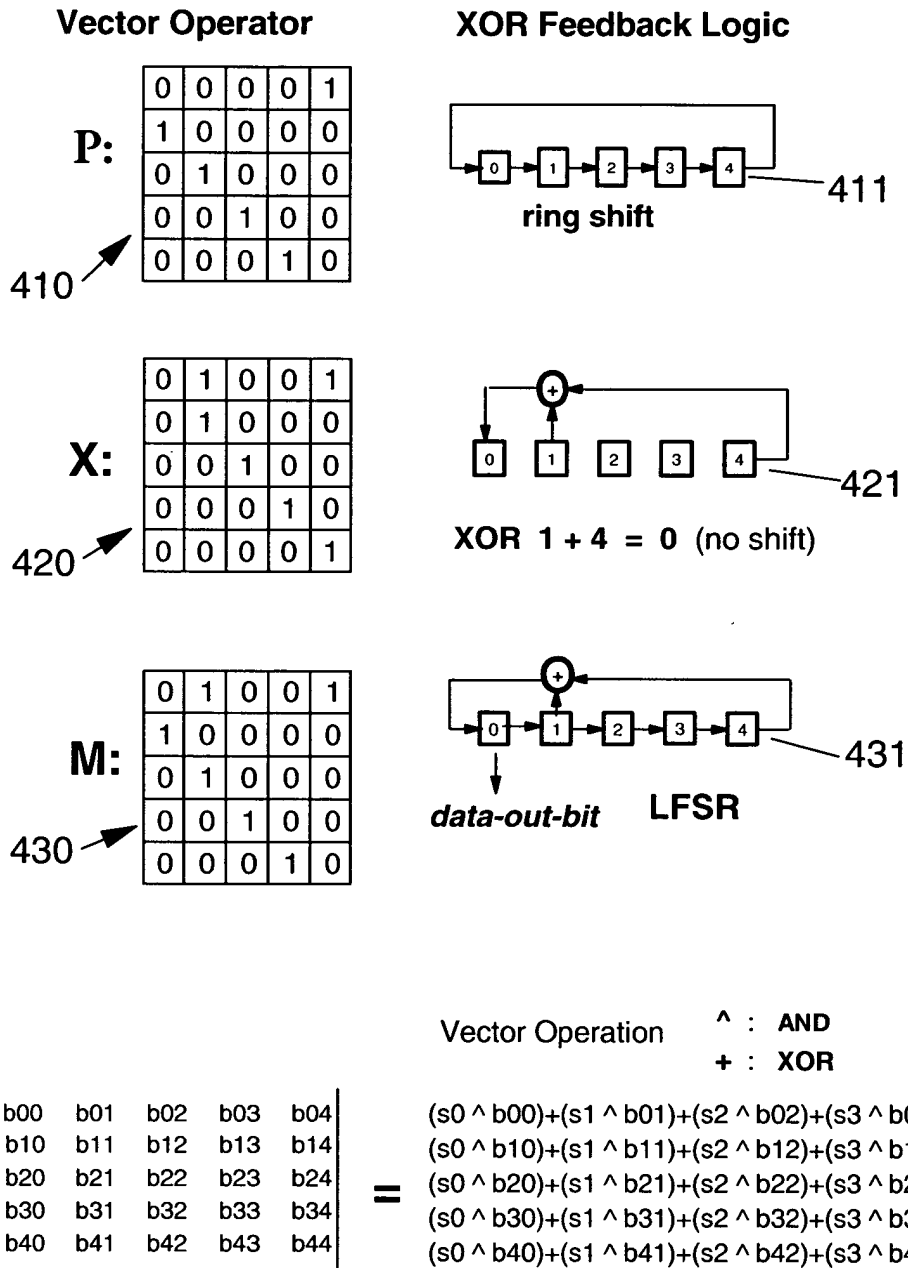


FIG. 4

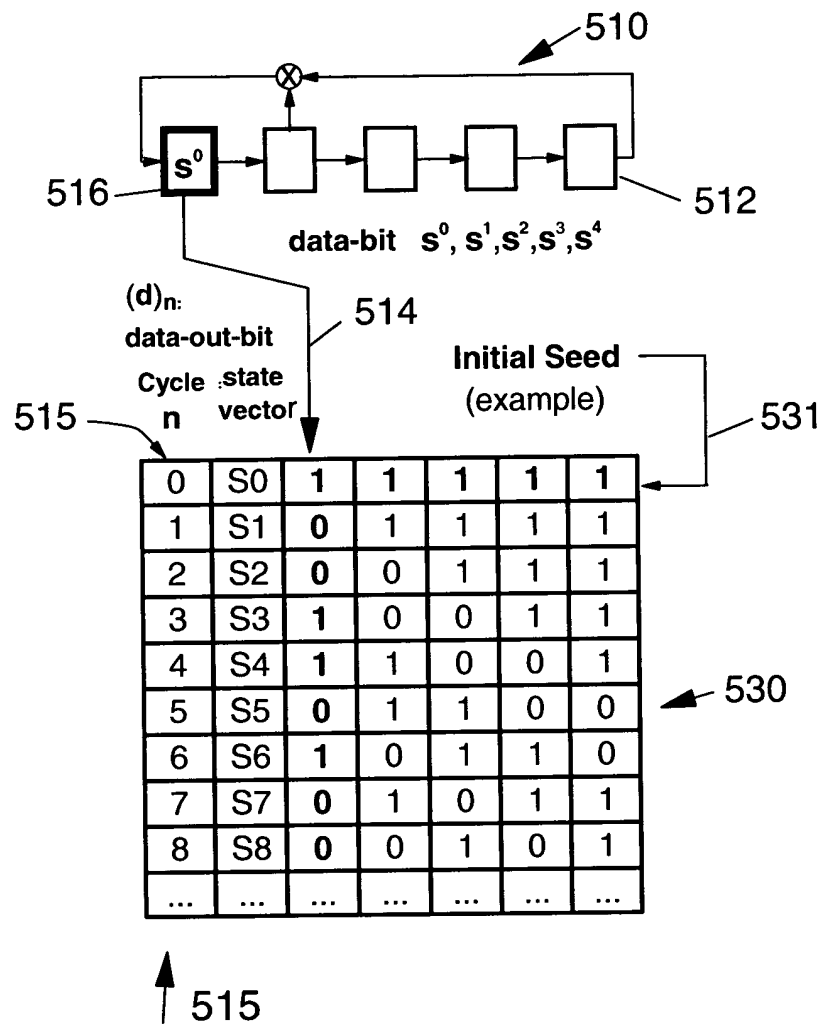


FIG. 5

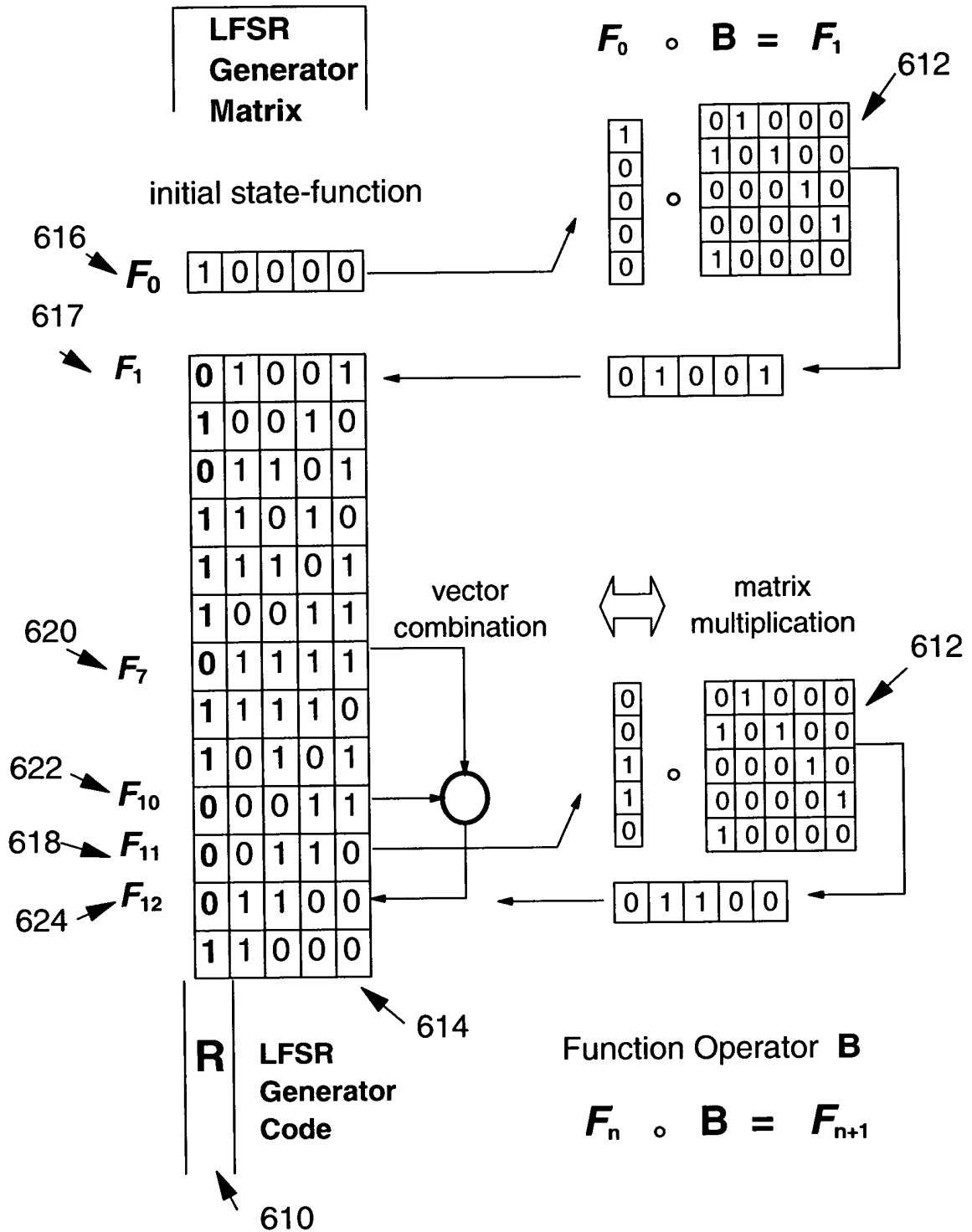


FIG. 6

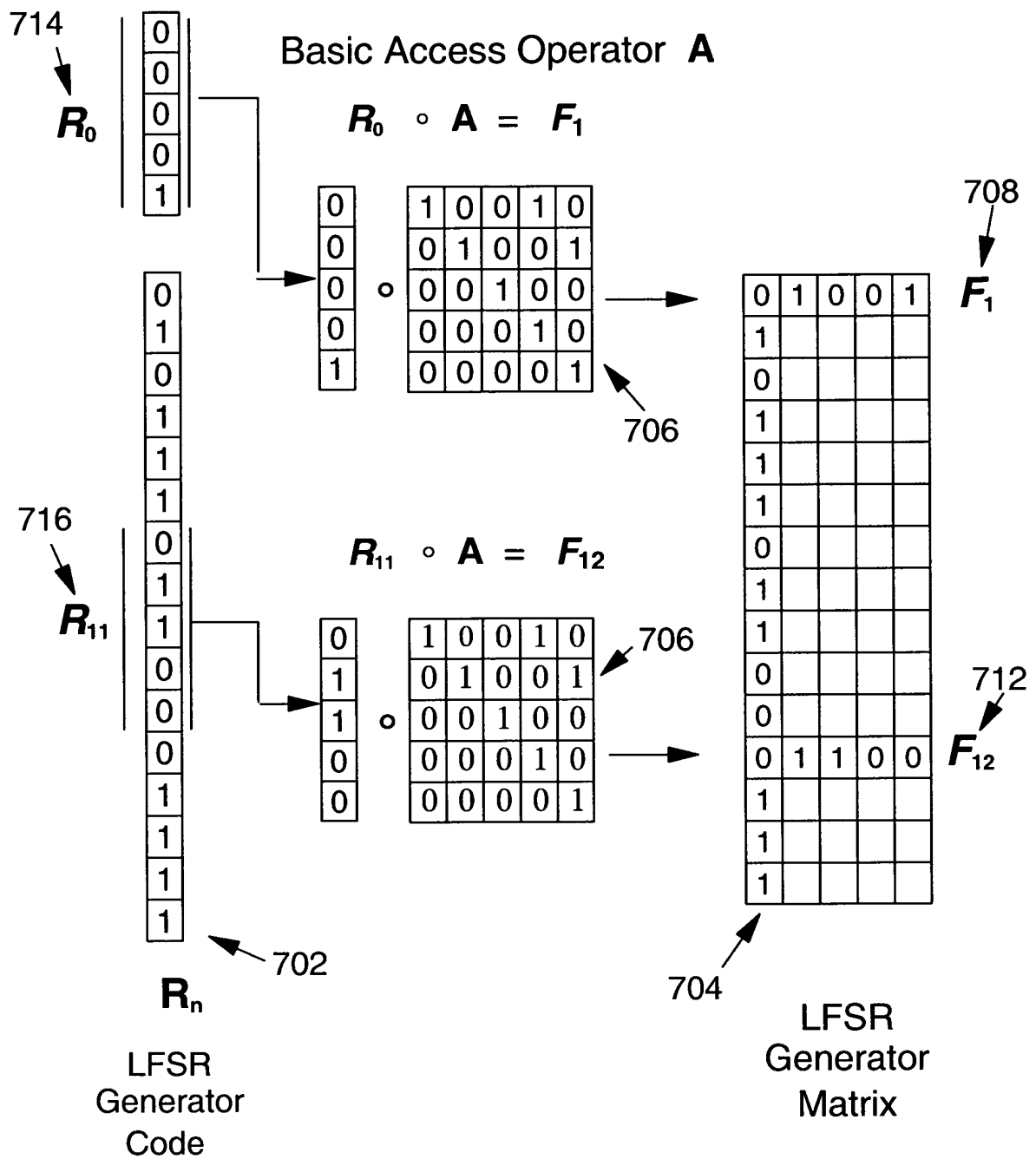
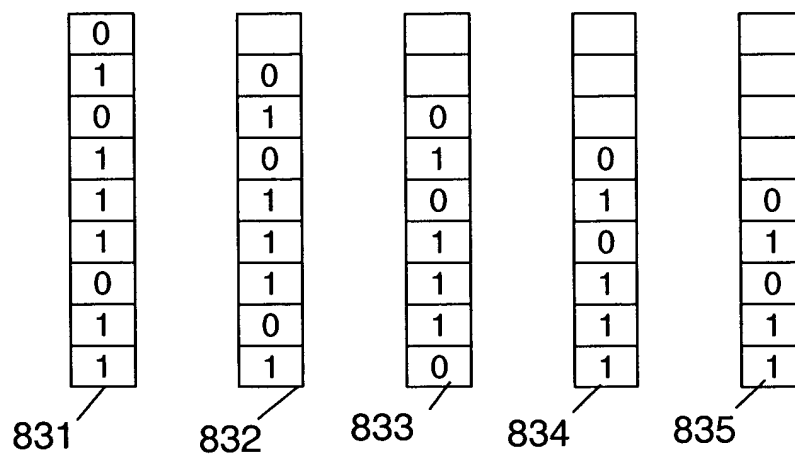
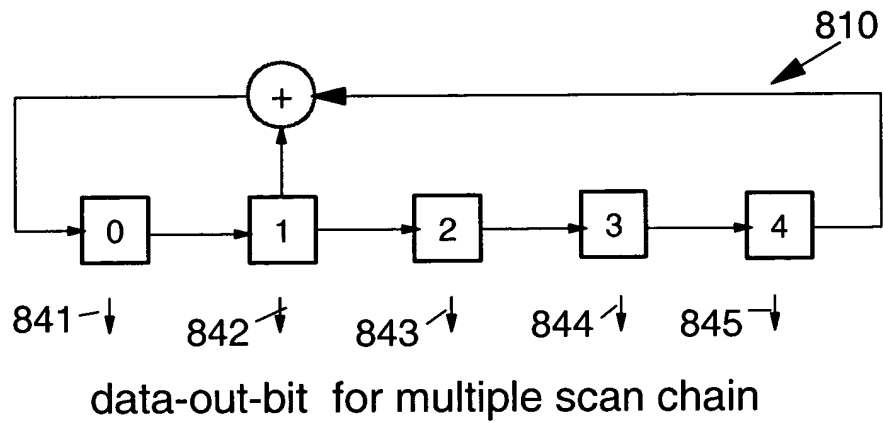


FIG. 7



BIT-Code representation

850 → **State Function** $(F^x)_n = R_n \circ A^x$

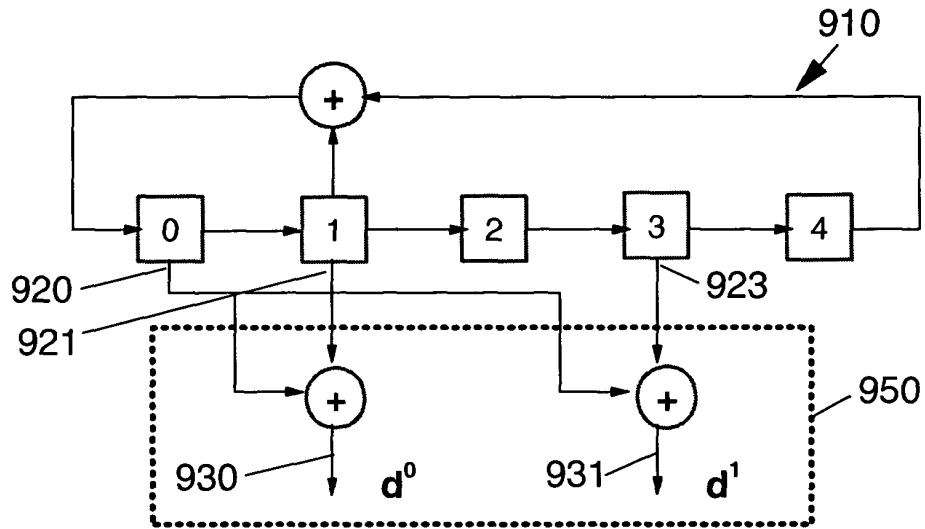
Chain Access Operator $A^x = A \circ P^x$

A Basic Access Operator

P^x Shift Operator for chain $x = 0, 1, 2, 3, 4$

R_n LFSR Generator Code $n = 0, 1, 2, \dots$ cycles

FIG. 8



Spreader XOR-Network
for multiple scan chain

BIT-Code representation

940 **State Function** $(F^{xy})_n = R_n \circ A^{xy}$
 Chain Access Operator $A^{xy} = A \circ (P^x + P^y)$

A Basic Access Operator

P^x Shift Operator for access $x = 0, 1, 2, 3, 4$

R_n LFSR Generator Code $n = 0, 1, 2, \dots$ cycles

FIG. 9

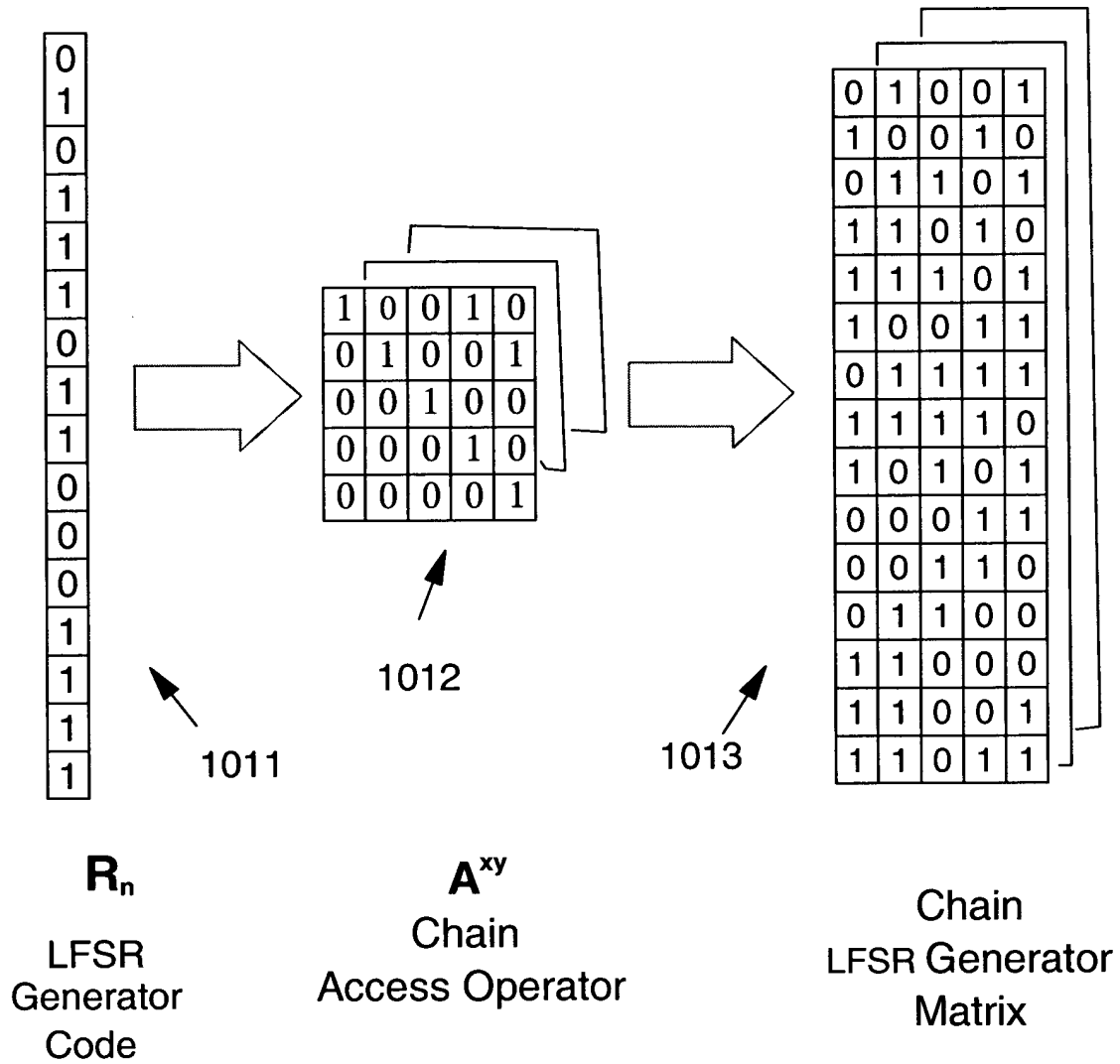


FIG. 10

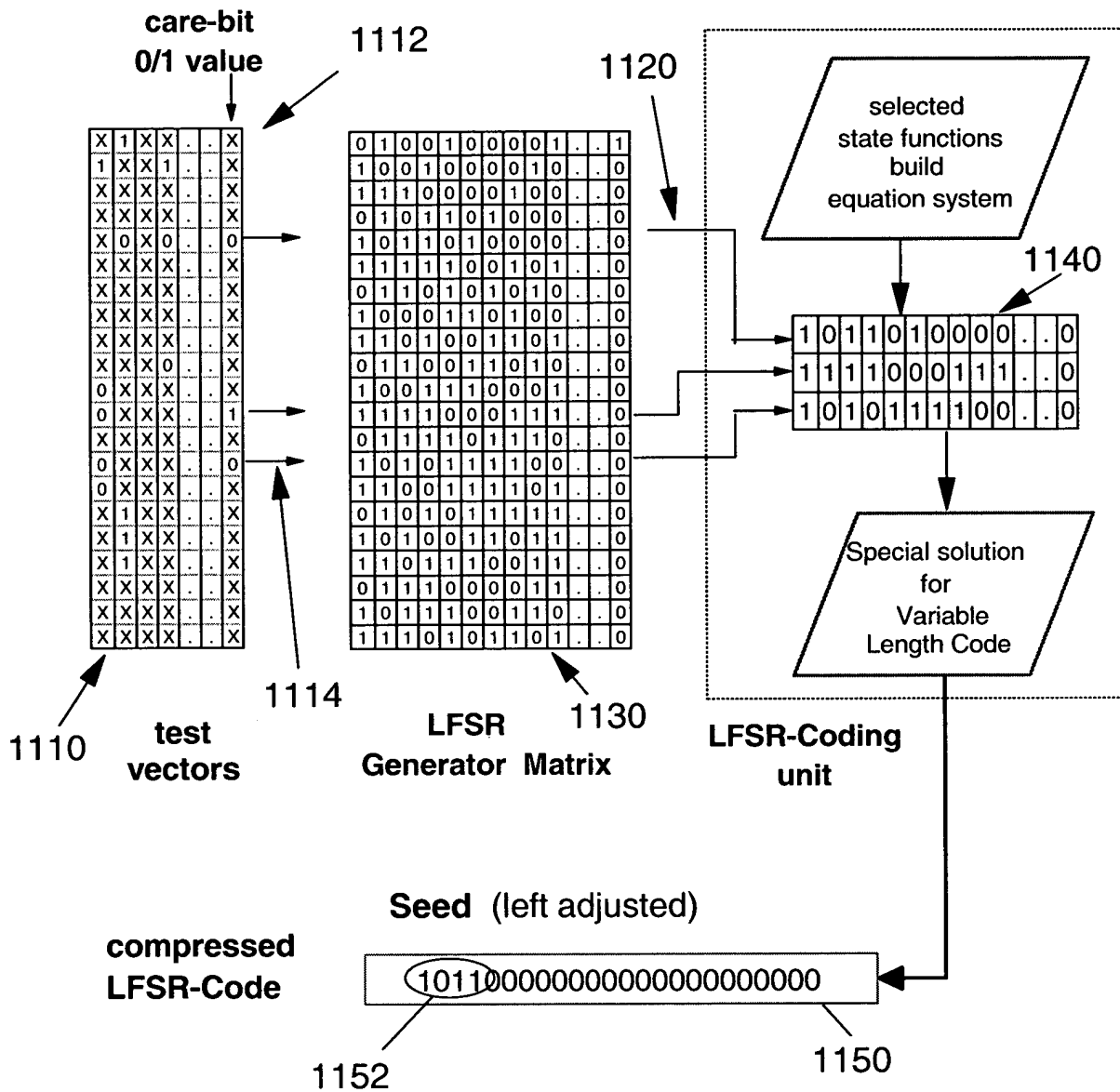


FIG. 11